

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A Fibre Channel switch, comprising:
a plurality of ports configured to receive and transmit a frame; and
a fabric manager coupled to the plurality of ports to obtain the received frame and to provide ~~a~~the frame to be transmitted, the fabric manager configured to add information to the frame; the information including receive and transmit port identity, the switch identity, and measured transmit and receive rates of the port receiving the frame; to update a sequence total length value based on the amount of information added to the frame to indicate where a next fabric manager should add information; and to provide the frame for transmission;
wherein the measured transmit and receive rates of the port are determined from an amount of data respectively transmitted and received by the port during a defined time period.
2. (Original) The switch of claim 1, the information further including the speed of the port receiving the frame and the link cost of a link connected to the transmit port.
3. (Previously Presented) The switch of claim 1, the information further including the port transmitting the frame.
4. (Previously Presented) The switch of claim 3, wherein the transmit and receive rates are based on a first defined time period.
5. (Previously Presented) The switch of claim 4, the information further including transmit and receive rates of the port receiving the frame and the port transmitting the frame

based on a second defined time period, the second defined time period being greater than the first defined time period.

6. (Previously Presented) The switch of claim 5, the information further including the number of frames transmitted and received by the port receiving the frame and the port transmitting the frame.

7. (Previously Presented) The switch of claim 4, the information further including the number of frames transmitted and received by the port receiving the frame and the port transmitting the frame.

8. (Original) The switch of claim 1, wherein the frame has an original source and an original destination and wherein the fabric manager is configured to add the information to the frame when the frame is traveling from the original source to the original destination.

9. (Original) The switch of claim 8, wherein the fabric manager is configured to add the information to the frame when the frame is traveling from the original destination to the original source.

10. (Cancelled)

11. (Original) The switch of claim 1, wherein the fabric manager is configured to select the port to transmit the frame based on normal routing rules.

12. (Original) The switch of claim 11, wherein the frame contains source routing information and wherein the fabric manager is configured to select the port to transmit the frame based on the source routing information.

13. (Original) The switch of claim 12, wherein the fabric manager is configured to use normal routing rules if the source routing information does not indicate a device directly connected to the switch.

14. (Previously Presented) The switch of claim 11, wherein the frame is destination addressed to a well known address, and wherein the fabric manager is configured to determine a destination address by retrieving data from the frame payload.

15. (Original) The switch of claim 1, wherein there are a plurality of equal cost routes that can be used for transmitting the frame and wherein the fabric manager is configured to transmit the frame over all of such routes.

16. (Previously Presented) The switch of claim 1, wherein the frame is an extended link services frame.

17. (Original) The switch of claim 1, wherein the fabric manager is configured to determine if the switch is the original destination of the frame, and if so, modify the frame to cause it to return to the original source.

18. (Original) The switch of claim 1, wherein the fabric manager is configured to determine if the switch was the original source of the frame, and if so, to capture the frame and not further transmit the frame.

19. – 54. (Cancelled)

55. (Currently Amended) A method performed by a Fibre Channel switch, the method comprising:

receiving a frame;

determining measured transmit and receive rates of the port receiving the frame from the amount of data respectively transmitted and received by the port during a defined time period;

adding information to the frame, the information including receive and transmit port identity, the switch identity, and the measured transmit and receive rates of the port receiving the frame;

updating a sequence total length value based on the amount of information added to the frame to indicate where a next fabric manager should add information; and

providing the frame to a port for transmission.

56. (Original) The method of claim 55, the information further including the speed of the port receiving the frame and the link cost of a link connected to the port.

57. (Previously Presented) The method of claim 55, the information further including the port transmitting the frame.

58. (Previously Presented) The method of claim 57, wherein the transmit and receive rates are based on a first defined time period.

59. (Previously Presented) The method of claim 58, the information further including transmit and receive rates of the port receiving the frame and the port transmitting the frame based on a second defined time period, the second defined time period being greater than the first defined time period.

60. (Previously Presented) The method of claim 59, the information further including the number of frames transmitted and received by the port receiving the frame and the port transmitting the frame.

61. (Previously Presented) The method of claim 58, the information further including the number of frames transmitted and received by the port receiving the frame and the port transmitting the frame.

62. (Original) The method of claim 55, wherein the frame has an original source and an original destination and the information is added to the frame when the frame is traveling from the original source to the original destination.

63. (Original) The method of claim 62, wherein the information is added to the frame when the frame is traveling from the original destination to the original source.

64. (Cancelled)

65. (Original) The method of claim 55, wherein the port selected to transmit the frame is based on normal routing rules.

66. (Original) The method of claim 65, wherein the frame contains source routing information and wherein the port selected to transmit the frame is based on the source routing information.

67. (Original) The method of claim 66, wherein normal routing rules are used if the source routing information does not indicate a device directly connected to the switch.

68. (Previously Presented) The method of claim 65, wherein the frame is destination addressed to a well known address, and wherein a true destination address is determined by retrieving data from the frame payload.

69. (Original) The method of claim 55, wherein there are a plurality of equal cost routes that can be used for transmitting the frame and wherein the frame is transmitted over all of such routes.

70. (Previously Presented) The method of claim 55, wherein the frame is an extended link services frame.

71. (Original) The method of claim 55, further comprising:
determining if the switch is the original destination of the frame, and if so, modifying the frame to cause it to return to the original source.

72. (Original) The method of claim 55, further comprising:
determining if the switch was the original source of the frame, and if so, to capturing the frame and not further transmitting the frame.

73.- 82. (Cancelled)

83. (Currently Amended) A switch, comprising:
a fabric manager configured to add information to a frame; the information including receive and transmit port identity, the switch identity, and measured transmit and receive rates of a port receiving the frame; to update a sequence total length value based on the amount of information added to the frame to indicate where a next fabric manager should add information; and to provide the frame for transmission;

wherein the measured transmit and receive rates of the port are determined from an amount of data respectively transmitted and received by the port during a defined time period.

84. (Previously Presented) The switch of claim 83, the information further including the speed of a port receiving the frame and the link cost of a link connected to a transmit port.

85. (Previously Presented) The switch of claim 83, the information further including the port transmitting the frame.

86. (Previously Presented) The switch of claim 85, wherein the transmit and receive rates are based on a first defined time period.

87. (Previously Presented) The switch of claim 86, the information further including transmit and receive rates of the port receiving the frame and a port transmitting the frame based on a second defined time period, the second defined time period being greater than the first defined time period.

88. (Previously Presented) The switch of claim 87, the information further including the number of frames transmitted and received by the port receiving the frame and the port transmitting the frame.

89. (Previously Presented) The switch of claim 86, the information further including the number of frames transmitted and received by the port receiving the frame and a port transmitting the frame.

90. (Previously Presented) The switch of claim 83, wherein the frame has an original source and an original destination and wherein the fabric manager is configured to add the information to the frame when the frame is traveling from the original source to the original destination.

91. (Previously Presented) The switch of claim 90, wherein the fabric manager is configured to add the information to the frame when the frame is traveling from the original destination to the original source.

92. (Previously Presented) The switch of claim 83, wherein the fabric manager is configured to select a port to transmit the frame based on normal routing rules.

93. (Previously Presented) The switch of claim 92, wherein the frame contains source routing information and wherein the fabric manager is configured to select the port to transmit the frame based on the source routing information.

94. (Previously Presented) The switch of claim 93, wherein the fabric manager is configured to use normal routing rules if the source routing information does not indicate a device directly connected to the switch.

95. (Previously Presented) The switch of claim 92, wherein the frame is destination addressed to a well known address, and wherein the fabric manager is configured to determine a destination address by retrieving data from the frame payload.

96. (Previously Presented) The switch of claim 83, wherein there are a plurality of equal cost routes that can be used for transmitting the frame and wherein the fabric manager is configured to transmit the frame over all of such routes.

97. (Previously Presented) The switch of claim 83, wherein the fabric manager is configured to determine if the switch is the original destination of the frame, and if so, modify the frame to cause it to return to the original source.

98. (Previously Presented) The switch of claim 83, wherein the fabric manager is configured to determine if the switch was the original source of the frame, and if so, to capture the frame and not further transmit the frame.

99. (Currently Amended) A method performed by a switch, the method comprising:

determining measured transmit and receive rates of a port receiving a frame from an amount of data respectively transmitted and received by the port during a defined time period;

adding information to the frame, the information including receive and transmit port identity, the switch identity, and the measured transmit and receive rates of the port receiving the frame;

updating a sequence total length value based on the amount of information added to the frame to indicate where a next fabric manager should add information; and

providing the frame to a port for transmission.

100. (Previously Presented) The method of claim 99, the information further including the speed of the port receiving the frame and the link cost of a link connected to the port.

101. (Previously Presented) The method of claim 99, the information further including the port transmitting the frame.

102. (Previously Presented) The method of claim 101, wherein the transmit and receive rates are based on a first defined time period.

103. (Previously Presented) The method of claim 102, the information further including transmit and receive rates of the port receiving the frame and the port transmitting the frame based on a second defined time period, the second defined time period being greater than the first defined time period.

104. (Previously Presented) The method of claim 103, the information further including the number of frames transmitted and received by the port receiving the frame and the port transmitting the frame.

105. (Previously Presented) The method of claim 102, the information further including the number of frames transmitted and received by the port receiving the frame and the port transmitting the frame.

106. (Previously Presented) The method of claim 99, wherein the frame has an original source and an original destination and the information is added to the frame when the frame is traveling from the original source to the original destination.

107. (Previously Presented) The method of claim 106, wherein the information is added to the frame when the frame is traveling from the original destination to the original source.

108. (Previously Presented) The method of claim 99, wherein the port selected to transmit the frame is based on normal routing rules.

109. (Previously Presented) The method of claim 108, wherein the frame contains source routing information and wherein the port selected to transmit the frame is based on the source routing information.

110. (Previously Presented) The method of claim 109, wherein normal routing rules are used if the source routing information does not indicate a device directly connected to the switch.

111. (Previously Presented) The method of claim 108, wherein the frame is destination addressed to a well known address, and wherein a true destination address is determined by retrieving data from the frame payload.

112. (Previously Presented) The method of claim 99, wherein there are a plurality of equal cost routes that can be used for transmitting the frame and wherein the frame is transmitted over all of such routes.

113. (Previously Presented) The method of claim 99, further comprising:
determining if the switch is the original destination of the frame, and if so, modifying the frame to cause it to return to the original source.

114. (Previously Presented) The method of claim 99, further comprising:
determining if the switch was the original source of the frame, and if so, to capturing the frame and not further transmitting the frame.

115. (Currently Amended) A switch, comprising:
means for determining measured transmit and receive rates of a port receiving a frame from an amount of data respectively transmitted and received by the port during a defined time period;
means for adding information to the frame, the information including receive and transmit port identity, the switch identity, and the measured transmit and receive rates of the port receiving the frame;
means for updating a sequence total length value based on the amount of information added to the frame to indicate where a next fabric manager should add information;
and
means for providing the frame to a port for transmission.

116. (Previously Presented) The switch of claim 115, the information further including the speed of the port receiving the frame and the link cost of a link connected to the port.

117. (Previously Presented) The switch of claim 115, the information further including the port transmitting the frame.

118. (Previously Presented) The switch of claim 117, wherein the transmit and receive rates are based on a first defined time period.

119. (Previously Presented) The switch of claim 118, the information further including transmit and receive rates of the port receiving the frame and the port transmitting the frame based on a second defined time period, the second defined time period being greater than the first defined time period.

120. (Previously Presented) The switch of claim 119, the information further including the number of frames transmitted and received by the port receiving the frame and the port transmitting the frame.

121. (Previously Presented) The switch of claim 118, the information further including the number of frames transmitted and received by the port receiving the frame and the port transmitting the frame.

122. (Previously Presented) The switch of claim 115, wherein the frame has an original source and an original destination and the information is added to the frame when the frame is traveling from the original source to the original destination.

123. (Previously Presented) The switch of claim 122, wherein the information is added to the frame when the frame is traveling from the original destination to the original source.

124. (Previously Presented) The switch of claim 115, wherein the port selected to transmit the frame is based on normal routing rules.

125. (Previously Presented) The switch of claim 124, wherein the frame contains source routing information and wherein the port selected to transmit the frame is based on the source routing information.

126. (Previously Presented) The switch of claim 125, wherein normal routing rules are used if the source routing information does not indicate a device directly connected to the switch.

127. (Previously Presented) The switch of claim 124, wherein the frame is destination addressed to a well known address, and wherein a true destination address is determined by retrieving data from the frame payload.

128. (Previously Presented) The switch of claim 115, wherein there are a plurality of equal cost routes that can be used for transmitting the frame and wherein the frame is transmitted over all of such routes.

129. (Previously Presented) The switch of claim 115, further comprising:
determining if the switch is the original destination of the frame, and if so, modifying the frame to cause it to return to the original source.

130. (Previously Presented) The switch of claim 115, further comprising:
determining if the switch was the original source of the frame, and if so, to capturing the frame and not further transmitting the frame.